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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/672,623  
Filing Date: September 26, 2003  
Appellant(s): TYSOE ET AL.

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Patrick S. Yoder  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed March 5, 2007 appealing from the Office action mailed May 10, 2006.

This is also in response to the supplemental appeal brief filed July 08, 2009.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is incomplete because Appellant failed to state that the amendment after final rejection filed on July 13, 2006 had been entered.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

The Moro patent: 6,940,388      MORO      09-2004

The RYU article: RYU et al., "Core loss depending on magnetizing angle from easy axis in grain-oriented 3% silicon-iron", June 2004.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-7 and 25-36 stand rejected under 35 U.S.C. 102(e) as being anticipated by the Moro patent (US 6,940,388).

Claims 1-7:

Claim 1: The '388 Moro patent teaches a dust core consists of a soft magnetic powder and an insulating binder (col. 2, lines 43-46). The insulating binder is present in an amount from, based on the magnetic powder, 0.3 wt-5 wt% and more preferably, 0.5 to 3.0 wt % (col. 5, lines 10-13). It is noted that the weight percent of resin as taught in the

Moro patent is based on the magnetic powder, not on the entire dust core composition, whereas weight percent of resin as claimed is based on the total amount of the magnetic material, not just the magnetic first portion. Moro also teaches an amount of 1.2 wt% of the resin based on 100wt% of the magnetic particle, which is equivalent to 1.09 wt% of the resin based on the total dust core material. See Moro'388, col. 7, Table 1. An amount of 1.09 wt% meets the claimed language "about 1 wt%". Therefore, the Moro patent anticipates the claimed invention for disclosing an amount of 0.3 wt% to about 1 wt%.

Claim 2: The '388 Moro patent also discusses an amount of insulating binder less than 0.3wt% (col. 5, lines 13-15). "Disclosure of composition of matter in reference may be anticipatory even though reference indicates that composition is not preferred or even that it is unsatisfactory for intended purpose". In re Nehrenberg (CCPA), 129 USPQ 383.

Claim 3: See col. 2, lines 43-46.

Claims 4 and 5: See col. 3, lines 17-23.

Claim 6: See col. 3, lines 40-43.

Claim 7: See col. 3, lines 28-38.

Claims 25-30:

Claim 25: The '388 Moro patent teaches a dust core consists of a soft magnetic powder and an insulating binder (col. 2, lines 43-46). The '388 Moro patent also discusses an amount of insulating binder less than 0.3wt% (col. 5, lines 13-15) as undesirable because it increases core loss. "Disclosure of composition of matter in reference may

be anticipatory even though reference indicates that composition is not preferred or even that it is unsatisfactory for intended purpose". In re Nehrenberg (CCPA), 126 USPQ 383. The low core loss of soft magnetic material with 3% of insulating silicone resin at a magnetic density of 1T and frequency 60 Hz has been determined to be lower than 2.5 W/kg, which is calculated to be equivalent to a core loss of below  $(2.5\text{W}/2.2\text{lb}) = 1.14\text{ W/lb}$ . See Ryu article, page 1821, figure 4. A core loss of 1.14 W/lb is almost 6 times lower than the core loss equivalent to the claimed soft magnetic material which is disclosed as 6 W/lb (see instant specification, page 2, paragraph [0008]). The Moro patent has predicted that any amount of silicone resin that is below 0.3 wt% (based on the weight percent of magnetic particles) would result in an increase of core loss. See Moro, col. 5, lines 10-17. A core loss of 6 W/lb (as reported in the instant specification at paragraph [0008]) is a significant increase from a core loss of below 1.14 W/lb possessed by the soft magnetic material taught by Moro. A core loss of 6 W/lb or lower when an amount of 1 wt% or below 0.15wt% of silicon resin is present in the soft magnetic material is not expected, but has been predicted by Moro. Therefore, a disclosure of insulating resin of less than 0.3wt% is an inherent disclosure of 0.05 wt% to 0.15 wt% because the core loss of the resulting soft magnetic material is about the same.

Claim 26: See col. 2, lines 43-46.

Claims 27-28: See col. 3, lines 17-23.

Claim 29: See col. 3, lines 40-43.

Claim 30: See col. 3, lines 28-38.

Claims 31-36:

Claims 31-36 are directed to the same subject matter as claims 25-30, except that they do not include the limitation "elongated shape" of the magnetic portion. Therefore, claims 30-36 are anticipated by Moro for the same reasons applied to the rejection of claims 25-30 above.

**(10) Response to Argument**

A. Claims 1 and 25: The shape of the particle- Does elongated shape preclude flat?

Appellant argued that the "flat" particles as disclosed in the Moro patent do not teach the claimed elongated particles. Various standard dictionaries, including the American Heritage and the Merriam-Webster Dictionary, define "elongated" as "having more length than width". At col. 3, lines 41-43, Moro discloses a flat shape having an aspect ratio of 5 to 25, which ratio clearly defines an elongated shape. Appellant appears to think that 'elongated' means "not flat". "Elongated" only defines two dimensions, length and width, and does not relate to the third dimension (thickness). Therefore, whether a particle is flat or not, it can be elongated if one dimension is longer than the other. Therefore, the Moro patent teaches the elongated particle as recited in claims 1, 25 and their dependent claims.

B. Claims 2, 25 and 31: The proportion of insulating binder in the magnetic material of 0.05 to 0.15 wt%.

Appellant argued that the Moro patent fails to teach an amount of 0.05 to 0.15 wt% of the insulating binder resin in the magnetic particle. The '388 Moro patent teaches a dust core consists of a soft magnetic powder and an insulating binder (col. 2, lines 43-46). The '388 Moro patent also discusses an amount of insulating binder less than 0.3wt% (col. 5, lines 13-15) as undesirable because it increases core loss. "Disclosure of composition of matter in reference may be anticipatory even though reference indicates that composition is not preferred or even that it is unsatisfactory for intended purpose". In re Nehrenberg (CCPA), 126 USPQ 383. A disclosure of an insulating resin of under 0.3 wt% is an inherent disclosure of all binder resin under 0.3 wt% including the claimed range of 0.04 wt% to 0.15 wt% for the following reasons. The low core loss of soft magnetic material with 3% of insulating silicone resin at a magnetic flux density of 1T and frequency 60 Hz has been determined to be lower than 2.5 W/kg, which is calculated to be equivalent to a core loss of below  $(2.5\text{W}/2.2\text{lb}) = 1.14 \text{ W/lb}$ . See Ryu article, page 1821, figure 4. The magnetic material 3 wt% silicon-iron taught in the Ryu article is the same as the dust core disclosed in the Moro patent because Moro patent teaches an amount of silicone resin of 3 wt% as a preferred range in the iron dust core (See Moro, col. 5, lines 10-15). At page 2, paragraph [0008] of the instant specification, Appellant reports that an insulating resin amount of 0.1 wt to 0.15 wt% in the claimed magnetic material would result in a core loss of 6 W/lb or less. A core loss of 1.14 W/lb (with 3 wt% resin) as taught in the Moro patent (and confirmed in the Ryu article) is almost 6 times lower than the core loss equivalent to the claimed soft magnetic material, which is disclosed as 6 W/lb (see instant specification, page 2,



paragraph [0008]). The Moro patent has predicted that any amount of silicone resin that is below 0.3 wt% (based on the weight percent of magnetic particles) would result in an increase of core loss. See Moro, col. 5, lines 10-17. A core loss of 6 W/lb (as reported in the instant specification at paragraph [0008]) is a significant increase from a core loss of below 1.14 W/lb possessed by the soft magnetic material taught by Moro. A core loss of 6 W/lb or lower when an amount of 1 wt% or below 0.15wt% of silicon resin is present in the soft magnetic material is not new or unexpected, but has been predicted by Moro (also reported in the Ryu article). Therefore, a disclosure of insulating resin of less than 0.3wt% is an inherent disclosure of 0.05 wt% to 0.15 wt% because the core loss of the resulting magnetic material is about the same when the insulating resin is present in less than 0.3wt% in the magnetic material.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/H. Thi Le/

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